

SANTA ROSA PLAIN CONSERVATION STRATEGY

SECTION 1 – INTRODUCTION

1.1 Setting

The Santa Rosa Plain (Plain) is located in central Sonoma County, bordered on the south and west by the Laguna de Santa Rosa, on the east by the foothills, and on the north by the Russian River. The Plain and adjacent areas are characterized by vernal pools, seasonal wetlands, and associated grassland habitat which support the threatened California tiger salamander (CTS) and four endangered plant species: Burke's goldfields, Sonoma sunshine, Sebastopol meadowfoam, and many-flowered navarretia. (See Appendix A for species accounts.) These plants grow only in seasonal wetlands, while the CTS uses seasonal wetlands for breeding, and the surrounding uplands for aestivation. The historic range of the CTS in Sonoma County is shown in Figure 1. The distribution of Burke's goldfields, Sonoma sunshine, and Sebastopol meadowfoam is confined almost entirely to the Plain. Many-flowered navarretia occurs mostly outside the Santa Rosa Plain, but its only Sonoma County population is on the Plain.

Urban and rural growth on the Plain has taken place for over one hundred years, and for the past twenty years urban growth particularly has encroached into areas inhabited by the CTS and the plant species discussed above. The loss of seasonal wetlands caused by development on the Plain has led to declines in the populations of the plants and the CTS. Within the past fifteen years, the cities in Sonoma County have implemented urban growth boundaries which serve to contain growth to specified areas; therefore, open space between the urban areas will be maintained. Some of the areas within these urban growth boundaries, however, include lands inhabited by CTS and the listed plant species. Agricultural practices have also disturbed seasonal wetlands and CTS aestivation habitat on the Plain. Some agricultural practices, such as vineyards, have also disturbed seasonal wetlands and CTS aestivation habitat on the Plain, while others, such as irrigated or grazed pasture, have preserved habitat with relatively little or no adverse impact.

1.2 Background

The Endangered Species Act (ESA) was enacted by Congress in 1973 to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved and provide programs for the conservation of those species, thus preventing extinction of native plants and animals. The U.S. Fish and Wildlife Service (FWS) is the principal Federal agency responsible for conserving, protecting and enhancing fish, wildlife, and plants, and their habitats. The agency enforces federal wildlife laws, and administers the ESA.

In 1970 the State of California enacted the California Endangered Species Act (CESA). The California Department of Fish and Game (DFG) is charged with enforcing the provisions of the Act, which are found in Section 2050 et. seq. of the Fish and Game Code

The filling of wetlands is regulated under the federal Clean Water Act (CWA), (Sections 404 and

401) and the state Porter-Cologne Water Quality Control Act (Porter-Cologne Act). Additionally local land use agencies approving development projects are required to evaluate the potentially significant impacts and identify mitigation measures under the California Environmental Quality Act (CEQA).

On July 22, 2002, the US Fish and Wildlife Service listed the Sonoma County distinct population of the California tiger salamander as endangered on an emergency basis under the ESA. The final rule was adopted on March 19, 2003. FWS listed the species as threatened throughout the range on August 4, 2004 which includes the former Sonoma County distinct population segment. The CTS is not listed under the CESA at this time; they are a state species of special concern. Burke's goldfields, Sonoma sunshine, and Sebastopol meadowfoam were federally listed as endangered on December 2, 1991. The many flowered navarretia was listed on June 18, 1997. These plants are also listed as endangered by the state. Prior to the listing of the CTS, projects were required to mitigate for wetland and endangered plant impacts based on a programmatic biological opinion for the four endangered plant species on the Santa Rosa Plain (Appendix B).

Following the initial listing, FWS published a map delineating the potential range of the CTS in the Santa Rosa Plain. This potential range is shown on Figure 1. The range encompasses a significant area planned for development within the ultimate urban growth boundaries of the cities of Cotati, Rohnert Park, and Santa Rosa, and in areas of existing and planned rural development in the unincorporated areas of Sonoma County. The range also encompasses significant existing and potential agricultural areas in the unincorporated portion of Sonoma County.

The listing results in a requirement for any project within the CTS range to determine if it may have an impact on the CTS. Specific actions by FWS and DFG are necessary to allow take of the species, with mitigation required, or to determine that the project will not have an effect on the species. This often necessitates two years of field surveys to determine if the species is present on a project site and if the site contains breeding pools. These survey requirements, and lack of clarity on how to mitigate for impacts to CTS habitat, created a complex regulatory environment which has seriously constrained planned development.

1.3 Origin of the Conservation Strategy

The listing of CTS has caused a level of uncertainty to land owners and developers about how the listing would affect their activities. Private and local public interests met with FWS to discuss possible cooperative approaches to protecting the species, while allowing planned land uses to occur within the range of the CTS.

The result of these discussions was the formation of the Santa Rosa Plain Conservation Strategy Team (Team). It was agreed that the Team bring together representatives of the appropriate government agencies and interested parties to attempt to develop a conservation strategy for the Santa Rosa Plain that conserves and enhances the habitat for the CTS and the listed plants, while considering the need for development pursuant to the general plans of the local jurisdictions.

1.4 Purpose of the Conservation Strategy

The purpose of the Conservation Strategy is to produce a strategy for habitat conservation and enhancement of listed species on the Santa Rosa Plain. The Conservation Strategy will be a coordinated mechanism for processing permits for projects that are in the potential range of listed species on the Santa Rosa Plain. The Conservation Strategy establishes the mitigation that will be required in areas of potential impact, and designates conservation areas where mitigation should occur.

SECTION 2 – CONSERVATION STRATEGY TEAM

2.1 Conservation Strategy Team Goals

The goals the Team developed for its efforts are as follows:

- Develop a habitat conservation strategy for California tiger salamander and listed plant species
- Identify proposed areas for conservation
- Develop an implementation framework for the conservation strategy which identifies short- and long-term actions and milestones as needed
- Establish development process predictability

2.2 Role of the Conservation Strategy Team

The role of the Team is to develop a conservation strategy that considers and coordinates input from a variety of interests, which are sometimes common and sometimes competing, but will result in conservation of habitat and ultimately be a component of the recovery of the CTS and listed plant species. The Team has no independent authority; rather, authority lies with each regulating agency. In accomplishing the goals of the Conservation Strategy Team, all federal, state, regional, and local permitting processes need to be followed, and be consistent with the Conservation Strategy.

There are various regulatory and legal requirements for which individual agencies are responsible in the Santa Rosa Plain. As stated previously, FWS is responsible for administration of the ESA and DFG is responsible for administration of the CESA. The US Army Corps of Engineers (USACE) and the US Environmental Protection Agency (USEPA) have regulatory responsibility for administering the Clean Water Act. The North Coast Regional Water Quality Control Board (NCRWQCB) has the responsibility regarding the Clean Water Act 401 Water Quality Certification as a State agency, and the state Porter-Cologne Act. The various local jurisdictions are responsible for compliance with the California Environmental Quality Act (CEQA).

SECTION 3 – CONSERVATION STRATEGY SUMMARY

The Conservation Strategy developed by the Team consists of a geographic framework and an implementation framework. The geographic framework describes nine conservation areas, and discusses how properties included in conservation areas may be affected. It also identifies areas of potential impact and areas not likely to impact CTS and listed plant species. The implementation framework describes how conservation preserves would be selected, mitigation measures necessary to achieve the strategy, and a variety of related mitigation issues. The implementation framework also addresses the application of mitigation banks, the development of management plans for preserves, adaptive management, and ongoing monitoring needs.

The success of the Conservation Strategy depends on the ability to fund the purchase and on-going management of mitigation properties. The Conservation Strategy provides a brief description of potential funding sources. Public participation and scientific peer review are necessary components of the process, and these processes are described. To assist readers of the Conservation Strategy, a glossary of terms and a list of acronyms are included. Finally, appendices are provided as additional resource information in support of the Conservation Strategy.

SECTION 4 – GEOGRAPHIC FRAMEWORK

4.1 Conservation Strategy Overview

Over the years, data on CTS breeding sites, migration corridors, and aestivation areas and the locations of federally listed plants within the Santa Rosa Plain have been collected by many individuals and organizations, including records from the California Natural Diversity Data Base. These data have been compiled into a GIS system for the Santa Rosa Plain in a cooperative effort by the FWS and DFG, resulting in a powerful mapping capability. This capability was then used by the Conservation Strategy Team to show existing known CTS and plant localities, land uses, jurisdictional boundaries, urban growth areas, and other geographic features. The strategy's geographic framework includes nine conservation areas distributed throughout the Santa Rosa Plain, and establishes preservation objectives for each conservation area.

The components of the conservation strategy are described in detail in the sections that follow. The conservation areas are shown on Figure 2.

4.2 Conservation Areas

The purpose of the conservation areas is to insure that preservation occurs throughout the distribution of the species. Using the GIS system described above, nine conservation areas ranging from northwest Santa Rosa to south of Cotati have been identified, and are shown on Figure 2. The designation of conservation areas is generally based upon the following factors: 1) known distribution of CTS, 2) the presence of suitable CTS habitat, 3) presence of large blocks of natural or restorable land, 4) adjacency to existing preserves, and 5) known location of

the listed plants. For example, the Llano and Stony Point conservation areas have some of the most important remaining large contiguous blocks of CTS habitat and the majority of documented breeding occurrences. Areas which are in the Laguna de Santa Rosa floodplain, are above 300 feet and characterized by oak woodland, or are adjacent to or surrounded by significant urban areas generally have been excluded from the boundaries of the conservation areas.

Preservation objectives have been established for each of the conservation areas. The preserve objectives recommend that 350-900 acres of actual preserve land ultimately be established within each conservation area, except the Southwest Santa Rosa Conservation Area. The range in acreage reflects the fact that the various conservation areas greatly differ in size and CTS distribution. For example, the Alton Lane Conservation Area identifies only 688 acres available for preservation, while the Llano Conservation area has 1,748 acres available. These preserve objectives represent a fraction of the overall conservation areas, and it is likely that the ultimate preserves will not be contiguous blocks of habitat. A basic assumption of the strategy is that the preserves would be located in areas of rural residential and agricultural land use similar to what currently exists, and that the current land use designations in the Sonoma County General Plan would not change substantially over time. If land uses were to change, the function of the preserves could be compromised. Table 1 shows the acreage goal for preservation in each conservation area.

Conservation areas are integral to the conservation of the species by directing preservation efforts into the most important areas, as well as to ensure well distributed populations. The Preserve Selection Criteria described in Section 5 explains the process to be used in selecting preserve sites as well as the minimum acreages needed to be preserved in each of the nine conservation areas.

The conservation area boundaries identify areas where mitigation for project related impacts to the listed species and vernal pools should be directed. It is also a focus of the strategy that emphasis be placed on mitigating the effects of near-term development in Southwest Santa Rosa in close proximity to where the impacts occur. The programmatic biological opinion for the listed plant species and the Santa Rosa Vernal Pool Ecosystem Preservation Plan recognized that listed plant distribution is sporadic within the Plain. The listed plants occur in the identified conservation areas; however, the scope of the strategy for listed plants does not cover their distributional ranges north of the Alton Conservation Area.

4.2.1 Effects on Properties Included in Conservation Areas.

Designation of an individual property as property within a conservation area does not change that property's land use designation or zoning, or otherwise restrict use of that property. However, ESA compliance is still required. Generally, acquisition of property for preserves will be from willing landowners. However, the Conservation Strategy does not cause government agencies to relinquish their rights of eminent domain. Conversely, the wildlife agencies have not historically used eminent domain.

4.2.2 Conservation Area Descriptions

Alton

The Alton Conservation Area consists of 688 acres. The only preserved habitat in this conservation area are the Alton Lanemitigation site (41 acres) and the proposed Woodbridge mitigation site (13 acres). The Alton Lane mitigation site has CTS present; however, it has been speculated that the CTS were introduced to the site. The Conservation Area and adjacent Northwest Santa Rosa Specific Plan area includes populations of Burke's goldfields and Sonoma sunshine which are the primary focus of conservation efforts in this area. Therefore, the minimum preserve goal is smaller for this conservation area than the other conservation areas due to its primary focus on listed plants. The minimum preserve goal for this area is 350 acres.

Wright

The Wright Conservation Area consists of 678 acres of which 172 acres have been conserved, as part of the Wright Preservation Bank. The boundaries of this conservation area were derived from known CTS and plant occurrence data. The existing preservation bank which supports both CTS and the listed plants is the focal point of conservation. The minimum preserve goal for this area is 450 acres.

Kelly

The Kelly Conservation Area consists of 708 acres. No land is currently preserved as habitat for plants or CTS. However, the City of Santa Rosa owns land within this area which is currently farmed and irrigated with recycled water from the Subregional Wastewater Reclamation System, which provides some conservation value. CTS, Sebastopol meadowfoam, and Burkes goldfields have been found in this Area. This conservation area is constrained by the Laguna de Santa Rosa to the west. The minimum preserve goal for this area is 450 acres.

Llano

The Llano Conservation Area consists of 1748 acres, of which 179 acres are currently preserved for CTS and plants. Additional habitat is currently proposed for preservation in this area. There are Sonoma sunshine and Sebastopol meadowfoam populations and CTS breeding localities within this area. Historic records of Burke's goldfields also exist for this area. This is the largest of the conservation areas. In addition, there may be additional breeding sites based on observations of adult CTS. The minimum preserve goal for this area is 900 acres.

Southwest Santa Rosa

The Southwest Santa Rosa Conservation Area is an area of significant existing and planned development. This area supports numerous CTS breeding sites and plant populations, primarily Sebastopol meadowfoam. This conservation area has existing preserves which should be connected by wildlife corridors (see Figure 2). These corridors will serve to provide wildlife linkages, aestivation habitat, and buffers from adjacent development. It is anticipated that these

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corridors will be an average width of 500 feet. Existing and designated preserve sites and connecting habitat total approximately 92 acres. The focus of conservation efforts in this area is to assure that existing and proposed preserve areas are buffered, connected, and maintained in a functional condition. The minimum preserve goal for this area is 230 acres.

Stony Point

The Stony Point Conservation Area consists of 1396 acres, of which 66 acres are currently protected in preserves. Additional acreage would be preserved with the approval of several proposed mitigation banks. There are Sonoma sunshine and Sebastopol meadowfoam populations and numerous CTS breeding localities in the eastern and central portion of the conservation area, where surveys have occurred. Based on land uses in the western portion of the conservation area, it is expected that more breeding localities would be found if additional surveys are conducted. The minimum preserve goal for this area is 900 acres.

Northwest Cotati

The Northwest Cotati Conservation Area consists of 900 acres, with no lands currently protected for CTS or listed plants. Based on review of aerial photographs, this area includes potential habitat for CTS and listed plants. There are no longer any viable breeding sites known to exist within this conservation area; however, there are records of breeding in roadside ditches. The previously documented breeding ponds were removed and mitigated during the development of a recent project. Additional surveys may result in the identification of breeding sites, or sites where additional breeding ponds could be created. Survey information for this area is limited but suggests that CTS may be abundant in suitable habitat. Only limited numbers of Sebastopol meadowfoam occurrences are known in the area. The minimum preserve goal for this area is 450 acres.

Southeast Cotati

The Southeast Cotati Conservation Area consists of 941 acres, with no areas currently protected for CTS or plants. There is an overall lack of survey information for plants and CTS within this area; however, several adult CTS findings have been reported. It is anticipated that with additional surveys, additional CTS may be found within this conservation area. No plant populations have been reported within this conservation area. The minimum preserve goal for this area is 450 acres.

Southwest Cotati

The Southwest Cotati Conservation Area consists of 1668 acres, with no areas currently protected for CTS or plants. There is a lack of survey information within this area and it is anticipated that with additional surveys new localities of CTS may be found. Several adult CTS findings have been reported, but no plant occurrences are known in this area. The minimum preserve goal for this area is 450 acres.

SECTION 5 – IMPLEMENTATION FRAMEWORK

Projects adversely affecting listed species are subject to several levels of review. The objective of the Conservation Strategy is to coordinate the project approval process to provide consistency, timeliness and certainty. Discretionary development projects permitted or undertaken by local and state government agencies must be reviewed under the CEQA. CEQA requires that all significant environmental impacts (including impacts to endangered species and wetlands) be mitigated to the extent feasible. If these projects would result in the fill of wetlands they must be authorized under federal Clean Water Act (sections 404 and 401) and state Porter-Cologne Act. In obtaining these permits appropriate mitigation must be provided to assure that there is no net loss of wetland function and/or acreage. These projects must also comply with the state and federal endangered species acts as appropriate.

FWS and DFG are the responsible agencies for the administration and management of endangered species acts (see Section 1.2). FWS will generally be approving projects in the Santa Rosa Plain through Section 7 of the ESA. Under Section 7 the FWS consults with a lead federal permitting agency on the affects of their permitting action on federally listed species. For projects on the Santa Rosa Plain, consultation is usually with the USACE for authorization for filling of wetlands. The FWS has 135 days to conclude a formal consultation assuming that adequate information is received. Within 30 days, FWS can inform the consulting agency if there is inadequate information and therefore the time period would not begin for consultation. Upon completion of formal consultation, FWS responds to the appropriate federal agency with a biological opinion that provides take authorization.

Preservation lands identified as mitigation for a specific project during formal consultation are included as part of the project description. However, often the FWS/DFG do not receive adequate biological information on the proposed mitigation sites, or the project is often not completely described which can create a delay. The Preserve Selection Criteria, discussed below, will assist applicants in identifying appropriate mitigation lands expediting the process.

FWS, in concert with DFG, intends to develop a programmatic biological opinion with adoption of the Conservation Strategy which includes CTS and listed plants. This new biological opinion will replace the biological opinion for listed plants issued on July 17, 1998. The new programmatic biological opinion will expedite the permitting process because it will standardize the requirements for addressing and mitigating impacts to endangered. The programmatic biological opinion will have a check list that will also aid applicants in providing the appropriate information for permit issuance.

Certain projects within the Santa Rosa Plain may only impact uplands. Where projects may impact CTS upland habitat and do not otherwise qualify for consultation pursuant to Section 7 of the ESA, the only mechanism to authorize take is through Section 10 of the ESA. This is commonly called a habitat conservation plan (HCP). These applicants would need to apply for an individual incidental take permit. FWS will consider and process incidental take permits consistent with the Conservation Strategy. However, as described in the Implementation Plan, (Section 5.3) an HCP could be developed for the entire Santa Rosa Plain.

Preserve lands will also be provided through the approval of mitigation banks, which are further described in Section 5.2.7.3. The Preserve Selection Criteria will provide guidance on appropriate locations for banks.

Appendix C provides schematics for the various regulatory processes that are required for projects affecting listed species.

5.1 Preserve Selection Criteria

The Santa Rosa Plain Conservation Strategy Preserve System (Preserve System) will provide suitable habitat for the CTS and federal and state listed plants. This section describes the process for evaluating, and approving individual properties or parcels for inclusion in the Preserve System.

The suitability criteria will be used by DFG and FWS in guiding both mitigation and mitigation bank development. These criteria are to aid and help expedite the selection of preserves. It is important to understand that there are numerous other components that are required to address mitigation requirements, such as management plans, long-term endowments, and other necessary requirements, all of which must be complete.

A critical component of the Preserve System is that 350-900 acres of actual preserve land ultimately will be established within each conservation area, except the Southwest Santa Rosa Conservation Area. The range in acreage reflects the fact that the various conservation areas greatly differ in size and CTS distribution. For example, the Alton Lane Conservation Area identifies only 688 acres available for preservation, while the Llano Conservation area has 1,748 acres available. This objective assumes that the preserves would be located in areas of rural residential and agricultural land use similar to what currently exists, and that the current land use designations in the Sonoma County General Plan would not change substantially over time. Table 1 shows the acreage goal for preservation in each conservation area.

TABLE 1

Conservation Areas	Acreage of Habitat Minus Developed Land	Minimum Preserve Acreage Goal for CTS	Acreage of Existing Preserve Land	Minimum Acres to be Preserved
Alton	688	350	56	294
Wright	678	450	210	240
Kelly	708	450	0	450
Llano	1748	900	294	606
SW Santa Rosa	235	230	103	127
Stony Point	1396	900	178	722
NW Cotati	900	450	0	450
SE Cotati	941	450	0	450
SW Cotati	1637	450	0	450
TOTALS	8931	4630	841	3789

The minimum area to be conserved within each conservation area is calculated using a 2200 foot buffer around known breeding pond clusters. The 2200 foot distance was based on a CTS study conducted at Jepson Prairie Preserve, Olcott Lake, Solano County which determined that this distance would encompass 95% of a CTS population (Trenham and Shaffer unpublished paper, 2003).

5.1.1 Suitability Criteria

Suitability Criteria assist in determining whether a particular property or parcel supports suitable habitat for CTS and/or federally listed plants and is otherwise suitable for inclusion in the preserve system.

Following is the list of Suitability Criteria. To be considered acceptable for inclusion into the preserve system, a proposed property or properties should meet all the following conditions.

- (1) Be within the boundary of one of the Conservation Areas designated by the conservation strategy.
- (2) a) Contain known, occupied CTS breeding, aestivation, or dispersal habitat and/or a known population or populations of federally listed plants; or represent potential CTS or plant habitat. With respect to potential CTS or plant habitat the site must exhibit, in the judgment of the FWS and DFG, reasonable potential for habitat restoration or enhancement.

OR

- b) Be approved by the FWS and DFG and function as a buffer separating an existing or likely future preserve site from nearby incompatible land uses (e.g. areas without CTS habitat), be a corridor or link from one preserve site to another or one conservation area to another, or be open space that provides other specific and recognizable conservation value for listed species.
- (3) Be free of excessive land surface features (e.g., roads, parking lots, other hardened surfaces, or buildings or other structures, i.e., extensive hardscape) that cause a significant portion of the site to be unsuitable as CTS or plant habitat. Generally, for purposes of this criterion, no more than 15% of the land surface of any potential preserve site may include or be covered by such features unless it is to be restored as part of the preservation action.
- (4) Not isolated from other nearby CTS habitats (preserve or non-preserve) by incompatible land uses (e.g., hardscape) or other significant barriers to CTS movement and dispersal (e.g., Highway 101).
- (5) Not inhabited by fish and bullfrogs or other non-native predatory species, unless, in the judgment of FWS and DFG, such species can be effectively removed or eradicated.

- (6) Not within the Laguna de Santa Rosa 100-year floodplain.
- (7) Exhibit no history or evidence of the presence (storage or use) of hazardous materials on the surface of the site unless proof of removal or remediation can be provided.

With respect to any particular criterion (or criteria), FWS and DFG may elect to waive the criterion. The proposed preserve site may be deemed suitable by providing specific unique conservation value not identified in the above list, and contribute to the recovery of one or more listed species. FWS and DFG must provide justification for the waiver and provide a copy to the administrative record.

Up to 20% of preserve acreage may occur outside the current conservation area boundaries based on the following requirements:

- 1. It meets the preserve selection criteria (except for condition 1)
- 2. It is within the range of the Sonoma County CTS
- 3. If a listed plant is impacted, mitigation will occur within its range
- 4. These additional lands would become a part of the conservation areas, and be monitored through the adaptive management process

Sites approved outside existing conservation areas must be either near a conservation area or of adequate size to be capable of maintaining a CTS population on its own or in conjunction with surrounding protected property (i.e., open space easements). This would be reviewed and tracked by the adaptive management team.

5.2 Mitigation

This section describes mitigation requirements on the Santa Rosa Plain and how proposed requirements address impacts to the affected species. If any land is to be developed in a conservation area, the impacts generally must be mitigated within that same conservation area. This is true for all of conservation areas except the Southwest Santa Rosa Conservation Area because of the large overlap with development within the urban boundary and the fragmentation of the CTS habitat.

5.2.1 Mitigation for Wetlands and Plants

Projects currently affecting wetlands and endangered plants on the Santa Rosa Plain are required to mitigate in the following ways:

a) Mitigation for Wetlands

Lost wetlands are replaced by project permittees by creating new seasonal wetlands or enhancing existing wetlands within the Santa Rosa Plain. When mitigation occurs prior to the loss of wetlands, generally the replacement ratio is 1:1. Where mitigation occurs concurrent with the

impact the ratio is increased to 1.5:1 as required in the programmatic biological opinion for the listed plants (see Appendix B).

b) Mitigation for Plants

Based on the programmatic biological opinion for the Santa Rosa Plain, projects filling potential endangered plant habitat must mitigate by preservation of an equal acreage of existing occupied habitat on a 1:1 ratio. For sites which have documented extant population(s) of an endangered plant, projects are required to preserve existing occupied habitat on a 2:1 basis. Mitigation under the programmatic biological opinion must occur within the same conservation unit in which the impacts occur; however, exceptions have been made to this requirement. The three plant units in the programmatic biological opinion, starting in the north, extend from the City of Windsor south to Airport Road. The Central Unit extends south from Airport Rd. to Hwy 12, and the southern unit extends south from Highway 12 to Highway 116 (see Figure 1 in Appendix A). Meeting the preservation requirement for plant mitigation becomes problematic due to the scarcity of potential mitigation sites for Sonoma sunshine and Burke's goldfields in the northern unit. Consequently mitigation in the Windsor area has occurred in the Central Unit.

5.2.2 Mitigation for CTS

Proposed projects within the potential CTS range will fall into one of three categories:

- a) Projects in an area likely to impact CTS and therefore required to mitigate; or
- b) Projects in an area where potential impacts to CTS can not be determined without further study; or
- c) Projects in an area unlikely to impact CTS.

All properties within conservation areas are included in category a), above.

Because the goal of the conservation strategy is to attempt to preserve a large enough area of suitable habitat to ensure the conservation of the CTS, mitigation ratios were developed based upon the assumption that mitigation would be provided by development anticipated over the next 10 years within the spheres of influence of the cities of Santa Rosa, Rohnert Park, and Cotati, and by residential or commercial development within the unincorporated area of Sonoma County consistent with the County's adopted General Plan. Mitigation would not be required by local agencies for any project that requires only a "ministerial" permit (that is, a project that does not require "discretionary" approval by the relevant land use agency under the California Environmental Quality Act).

This mitigation approach can be implemented by the permitting and resource agencies through their independent jurisdictions as well as in recommendations as part of the CEQA process conducted by the local land use agencies when making discretionary project approvals.

The same mitigation and survey requirements apply to both private and public projects. Mitigation requirements for projects that are linear in nature (roads, pipelines, etc.) are described in Section 5.2.6.

5.2.2.1 Projects Likely to Impact CTS

Mitigation ratios for CTS are determined based on likely impact to the species and its habitat. Adult CTS have been observed up to 1.3 miles from breeding ponds (S. Sweet, University of California, Santa Barbara, 1998). Therefore, a 2:1 mitigation ratio will generally apply to projects within 1.3 miles of existing breeding sites or adult occurrences.

The ratio was developed based on calculations regarding the amount habitat needed to meet the required conservation goal and the known projected impacts based on development projected to occur within the Spheres of Influence of the cities of Santa Rosa, Rohnert Park, and Cotati and within the unincorporated area pursuant to the County's General Plan within CTS habitat during a projected 5 to 10 year period. This was derived and subsequently mapped through GIS by using existing land use plans, aerial photography, expert knowledge of the areas, and data on CTS and plant from the California Natural Diversity Data Base.

The cities of Santa Rosa, Rohnert Park and Cotati have voter-approved urban growth boundaries designed for city-centered growth and intended to preserve rural land uses outside of the urban growth boundaries. The mitigation ratios and known projected impacts are based on development within the urban growth boundaries. However, some development in county areas outside of the urban growth boundaries is likely to occur, and some of that development is likely to have impacts that would need to be mitigated. The County of Sonoma estimates that some acres of impact may occur within a projected 5- to 10-year period. The locations that these impacts may occur can not be identified at this time. Mitigation for these impacts would be the same as for impacts in the cities, i.e. 2:1 mitigation for any projects within 1.3 miles of an existing breeding pool where the property may provide suitable CTS habitat. This would generate twice that many acres of preserve land distributed throughout the three zones. Again, the mitigation requirements would only apply to discretionary projects under CEQA.

The mitigation requirement for projects on parcels with existing hardscape can be reduced by the amount of hardscape present assuming that the hardscape does not provide some recognizable benefit to the species. If such a function is provided and the habitat will be preserved, measures must be included in future development to address loss of this function, i.e., retention of a movement corridor.

It is important to note that the mitigation ratios and the conservation strategy are dependent on current information on both CTS distribution and development that is currently proposed. If the land use designation of areas within existing CTS habitat changes, or if new information is discovered regarding the current range of CTS, such changes may be addressed in the implementation review process discussed in Section 5.4.

5.2.2.2 Projects in Undetermined Impact Areas

There are areas within the historic range where CTS information is lacking and further study may be needed to determine the potential impacts of projects within these areas. These will be identified as undetermined impact areas. Currently, some areas have not been surveyed for CTS

so although these areas are beyond 1.3 miles from known breeding sites or adult occurrences there may be CTS present. For proposed projects in these areas, FWS will first conduct a preliminary evaluation to determine whether the proposed projects are or are not likely to affect CTS, then project proponents may choose to conduct surveys using FWS protocols, or mitigate at a 2:1 ratio as described above. If surveys are conducted, mitigation requirements would be based on the results of the surveys. If CTS are present, then 2:1 mitigation would be required. If CTS are not present, the project would be unlikely to impact CTS and no mitigation would be required. Appendix C shows the process for projects in undetermined impact areas.

As surveys are conducted, additional CTS breeding sites may be identified within the undetermined impact areas. Identification of additional breeding sites will not result in mitigation requirements on surrounding properties. The process outlined in Appendix C will continue to apply to surrounding properties.

Additional preserve land beyond that identified in the above projections is expected due to identification of additional CTS occurrences as surveys are conducted. Since mitigation requirements generally apply to projects within 1.3 miles of existing breeding sites, identification of additional breeding sites will impact the property where the survey was conducted and surrounding properties.

5.2.2.3 Projects Unlikely to Impact CTS

Impact to CTS is not likely on lands beyond 1.3 miles from breeding sites, or on lands that are surrounded by significant barriers or are otherwise unsuitable CTS habitat. Properties where any proposed projects are not likely to impact CTS will be shown on a map. Neither surveys nor mitigation would be required for projects on these properties.

No CTS mitigation or surveys will be required for projects outside of the potential CTS range.

FWS has issued letters to particular project proponents stating their determination that the projects are unlikely to affect CTS; therefore, no mitigation would be required. The terms in any letters issued by FWS prior to completion of the Conservation Strategy will apply to these projects.

Some types of projects, such as a porch addition or construction of a swimming pool, may be insignificant enough that they would be considered unlikely to impact CTS even though the project is located on a property shown in an Impact Area or Undetermined Impact Area. Additional project and property information would be needed to determine whether such small projects would be likely to impact CTS. Such determinations are beyond the scope of this Conservation Strategy. Other activities in an impact area that would not have significant impact include irrigation and farming activities, such as shallow discing (6 to 8 inches deep), manure spreading, seeding, and harvesting.

5.2.3 General Mitigation Requirements

Mitigation can be accomplished by acquiring, by fee title or easement, an appropriate preserve

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site and undertaking any wetland restoration/creation that would be required. Any mitigation site will require an endowment for long-term management and monitoring. Additionally, mitigation can be achieved either through individual mitigation sites or through mitigation banks.

Minimum Requirements:

- Land which satisfies the preserve selection criteria, adequate in size and location to assure long term viability
- Fee title or conservation easement, the property is preserved for the benefit of the affected species, any retained activities (agricultural) must be compatible with this purpose.
- Wetland creation plan, if wetlands are filled, as determined by USACE and NCRWQCB
- Management and Monitoring Plan: specified management actions necessary to manage, enhance, and protect the resources protected and created on the site. Monitoring plan to determine the success of created wetland and the status of the protected resources and effectiveness of specified management actions.
- Endowment: Funding to assure long-term management and monitoring.

5.2.4 Mitigation Banks

A bank is a pre-approved site which preserves habitat for sensitive species and or creates appropriate habitat. The appropriate amount and type of credits may be purchased from an approved conservation/wetland bank(s). (See Section 7.3, “Mitigation Banking”) The benefits of banks are that the individual requirements are in place in advance of the impact and the management and monitoring responsibilities of the individual seeking mitigation are assumed by the bank operator.

5.2.5 Management Plans

Management plans must be developed for each preserve site. The management plan would address appropriate grazing and/or mowing to manage thatch, control invasive plants, and provide for fire fuels management, fencing, monitoring, and other long-term management actions. The management plan also will identify the amounts and sources of funding needed to maintain the preserve. DFG and FWS have developed a template that outlines appropriate management activities that must occur to maintain and manage the preserve site (Appendix D).

5.2.6 Mitigation for Linear Projects

Linear projects are defined as construction of roads, pipelines, trails, fences, utility lines, pedestrian pathways, roadside ditches, other similar structures, or maintenance of these structures. These projects may have different impacts and minimization measures than a development proposal. Such projects may have permanent direct or indirect effects or may only

have temporary effects. For example, if a road crosses an important CTS conservation area it could have a major impact by isolating the aestivation habitat from occupied breeding sites. In this example, the direct impact for the road construction may be minimal; however the indirect impacts of the road would be large. Pipeline construction on the other hand may have temporary effects associated with construction but once work is complete the affected area can once again function as habitat.

Minimization measures would be employed in design and construction to reduce direct impacts to CTS, listed plants, and hydrology of the surrounding areas. Minimization measures may include construction during the dry season, adequate passageways/under-crossings for CTS based on a recent survey, lighting designed to minimize off-road ground illumination, retaining the hydrologic characteristics of the surrounding area and avoiding breeding habitat as defined in the Conservation Strategy.

Where mitigation is required for linear projects, the impact area consists of the land disturbed by the construction operation. This may be significantly wider than the area occupied by the structure after construction is complete.

5.2.6.1 Roads (including On-Road Pathways)

Existing and proposed roads are within conservation areas, potential development areas, undetermined impact areas, and in areas where any construction is unlikely to impact CTS. In this section, “road” means a new road or expansion of an existing road for any purpose (including construction of on-road pathways). Road projects that would not impact CTS (i.e., signage, signalization without widening, vertical and horizontal curve adjustments without widening or disturbance to the hydrology of the surrounding area) would not be required to mitigate.

Where mitigation is required, preference will be given to mitigation sites that are located near the impact area.

Different types of road projects have different mitigation ratios because of the varying degrees of effects to migrating or dispersing CTS and effects to listed plant species. The different ratios also encourage design practices that minimize impacts to the species. Although there are no known studies conducted to determine which curb designs pose a barrier CTS, it is believed that CTS cannot or will not climb over curbs. Assuming that a well-designed road or pathway provides excellent passageways/under-crossings, the effects are greatly reduced compared to a road with curbs and no passageways.

a) Roads in Conservation Areas

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Roads within conservation areas or along conservation area boundaries are particularly important. If not well designed, roads in these locations could divide conservation areas and prevent CTS migration from breeding pools to aestivation areas. These roads should be designed to allow for CTS migration by omitting curbs across the entire road width, providing gaps in curbs, or by providing passage underneath the roadway. CTS passages underneath roadways should be based on current research results for effective passage design, and located where a recent survey shows that CTS have crossed the area in the past. Studies have shown that lighting can negatively impact CTS, so roads within conservation areas or along conservation area boundaries that include lighting systems should be designed to direct the lighting to the roadway with minimal illumination of the surrounding area. Well-designed roads (and well-designed projects that widen existing roads) are encouraged by providing a reduced CTS mitigation ratio of 1:1 for road projects that meet the following criteria:

- adjacent to a conservation area boundary or through one or more conservation areas,
- constructed with adequate passageways/under-crossings for CTS based on a recent survey,
- include lighting designed to minimize off-road ground illumination,
- retain hydrologic characteristics of the surrounding area
- avoid breeding habitat as defined in the conservation strategy.

For road projects that meet the above criteria and are within the historical or current range of the listed plants, then the mitigation ratio would be 1:1 or more depending on direct or indirect effects to the listed plants.

If a proposed road splits a conservation area, having the potential of effectively isolating a population or populations and reducing the ability for CTS migration or dispersal, then the road must be designed using the above criteria. Roads along a conservation area boundary that do not meet the above criteria would be required to mitigate at a 2:1 ratio as described below.

b) Roads in Potential Development Areas

Roads in potential development areas have similar impacts to development projects. Since these areas are not intended for long-term CTS habitat, special design features are not needed for roads in potential development areas. Road projects would be required to mitigate just for the impact on potential upland habitat and any effects to listed plant species. The mitigation ratio would be 2:1 or more depending on any direct or indirect effects to listed plants.

As an alternative to the 2:1 CTS mitigation ratio, projects constructing a road in a potential development area may propose to retrofit an existing road through a conservation area. The existing road would be retrofit to meet the criteria described in a) above. The area of the existing road that is retrofit could be used as up to half of the mitigation area required. For instance, if a new road in a potential development will be 44 feet wide and 1,000 feet long it would have an impact area of 44,000 square feet or about 1 acre. At a 2:1 mitigation ratio, 2 acres of mitigation would be required. An existing road through a conservation area, 22 feet wide and 2,000 feet long, could be retrofit per the above criteria to provide 1 acre of mitigation; in addition, 1 acre of mitigation lands would need to be provided.

3) Roads in Undetermined Impact Areas

If a road is proposed in an Undetermined Impact Area as shown on Figure X, project proponents may ask FWS to conduct a preliminary evaluation to determine whether the proposed project is likely to affect CTS. If FWS can not determine that the proposed project is not likely to affect CTS, then the project applicant may choose to conduct surveys using FWS protocols or mitigate as described above. Mitigation requirements would be based on the results of the surveys. The process for projects in undetermined impact areas is shown in Appendix C.

4) Roads Not Likely to Affect CTS

Roads in areas that have been determined to be already developed or isolated to an extent that projects are unlikely to affect CTS are not required to mitigate.

5.2.6.2 Pipelines/Utility Lines/Pedestrian Pathways/Trails/Fences/Ditches

These types of project have temporary, and sometimes minimal permanent, impacts to CTS and require mitigation different than road projects. The following mitigation requirements apply to projects proposed in conservation areas and in potential development areas; they encourage projects to be designed and implemented in ways that minimize impacts.

1) If the impacts

- are temporary (habitat would be restored within 1 year)
- do not impact breeding habitat or are beyond 500 feet from breeding habitat
- do not include lighting,
- retain the hydrologic characteristics of the surrounding area, and
- avoid any effects to listed plant species or their habitat

then the five avoidance and minimization measures listed above would be sufficient and no additional mitigation would be required.

2) If the impacts

- are temporary (habitat would be restored after 1 year but before 3 years)
- do not impact breeding habitat or are beyond 500 feet from breeding habitat, and
- do not include lighting

then the mitigation ratio would be 1:1 or more, depending on any direct or indirect effects to listed plant species.

3) If the impacts would affect habitat for 3 years or more, impact breeding habitat or are within 500 feet of breeding habitat, disturb the hydrologic characteristics of the surrounding area or include lighting that could adversely affect CTS, then applicants will follow the mitigation ratios as outlined above for road projects and the programmatic biological opinion for the listed plants.

If a project of this type (Pipelines/Utility Lines/Pedestrian Pathways/Trails/Fences/Ditches) is proposed in an Undetermined Impact Area, project proponents may ask FWS to conduct a preliminary evaluation to determine whether the proposed project is likely to affect CTS. If FWS can not determine that the proposed project is not likely to affect CTS, then the project applicant may choose to conduct surveys using FWS protocols or mitigate as described above. Mitigation requirements would be based on the results of the surveys. The process for projects in undetermined impact areas is shown in Appendix C.

5.2.6.3 Maintenance

Examples of maintenance of linear facilities include street patching, sealing, or overlaying, pipeline cleaning, excavation to repair underground lines, and removing deposited sediment from roadside ditches. Mitigation for impacts due to maintenance of linear facilities will follow the guidelines listed above. If mitigation is required it will only be necessary once for each segment of each facility. Maintenance impacts would be mitigated at the time of construction, or before maintenance is completed for existing infrastructure. Additional maintenance activities would not require further mitigation.

5.2.7 Other Mitigation Issues

5.2.7.1 Surveys

Currently projects within the range of the CTS are required to conduct two years of surveys pursuant to FWS survey protocols (see Appendix E) to demonstrate the status of the species. Currently, where a project proponent can demonstrate that CTS is not likely to be present, (no suitable habitat is present, site is small and isolated from other habitat), the requirement to survey may be waived at the discretion of FWS.

With implementation of the Conservation Strategy, projects with known impacts to CTS as described in the strategy will mitigate at 2:1 ratios and will not need to do protocol level surveys. Projects located within CTS undetermined impact areas are required to conduct a habitat assessment pursuant to FWS survey protocols. If aerial photographs, a wetlands delineation, or other information indicate that potential breeding habitat, as defined in the FWS survey protocol, is present on the site, two years of larval surveys will be conducted. Since plant surveys will be required due to the presence of wetlands CTS larval survey can be conducted concurrently. Based on the results of the survey, mitigation, if necessary, will be consistent with the requirements of the Conservation Strategy. Where a project proponent can demonstrate that CTS are not likely to be present, (no suitable habitat is present, site is small and isolated from other habitat), the requirement to survey may be waived at the discretion of FWS.

Currently, within the Santa Rosa Plain some areas have not been surveyed for CTS. Although these areas may be outside 1.3 miles from a known breeding site, they may have CTS present. In these cases, a project proponent can choose to survey or mitigate at 2:1. (See Implementation Framework) All surveys are the responsibility of the project proponent.

5.2.7.2 Translocation

Translocation as it applies to the sensitive species of the Santa Rosa Plain (CTS and annual plants—Burke’s goldfields, Sebastopol meadowfoam, Sonoma sunshine, and many-flowered navarretia) involves the collection and relocation of animals (larvae or adults) or plant materials (seeds or seed bank) to suitable unoccupied habitat within the Santa Rosa Plain. However, it should be recognized that translocation of these species is still experimental and long term monitoring and adaptive management will be necessary to establish standardized techniques that have demonstrated the most reliable success. FWS and DFG may require translocation of both CTS and listed plants on a case by case basis as a take minimization and conservation measure.

There are recognized potential benefits of translocating CTS and listed plants in the Santa Rosa Plain. Translocation of larvae and adult CTS can provide for the reintroduction of the species into areas from which they have been extirpated if suitable habitat is present. It can also be a mechanism of minimizing project impacts by limiting direct take and loss of individuals. Based on limited genetic information from the plain it appears that translocation could be a way of conserving the genetic diversity of the Sonoma County populations of CTS and listed plants. To date, several translocations of CTS have occurred on the plain but have not been adequately monitored or documented to determine if they were successful. The translocations have been primarily for the purpose of salvaging individuals to minimize take.

Relocation of plants through the salvage of seed or seed bank from habitat that will be lost or seed collection from existing preserved population, to newly created or existing unoccupied areas of suitable habitat is a way of establishing new populations of the species. It can also be a mechanism for preserving the genetic diversity of the sensitive species on the Santa Rosa Plain. The success of this has been documented for plants at several sites on the Santa Rosa Plain, where appropriate restoration techniques have been employed.

It should be recognized that translocation of these species is still experimental and all of the benefits or consequences may not have been determined. Monitoring and/or research, particularly for CTS translocations, are needed to determine the effectiveness of relocations. The effect of translocation on genetic diversity, positive or negative, is unknown at this time.

5.2.7.2.1 Guidelines for Translocation

Translocation may be required for salvage or compensatory mitigation. Where translocation is used for salvage, monitoring will be the responsibility of the land management organization. Monitoring may or may not be conducted, at the discretion of the land management organization. Where translocation is used to establish new populations of the listed species for the purposes of mitigating project impacts, monitoring will be required. Resources must be available for an appropriate length of time to monitor and determine the success or failure of the relocation. Performance standards and success criteria also need to be established. In either case, the receptor site must be protected from future development via fee title, or conservation easements held by an appropriate land management organization.

Translocation should only occur where it will not result in possible adverse genetic effects to the

species being relocated. Consequently, translocation should only occur to sites which currently do not support the species. Translocation to occupied sites for the purpose of enhancing the distribution of the species should only be done with animals or plant materials from the site or sites from the immediate vicinity.

5.2.7.2.2 CTS Translocation

Translocation of CTS would be to the nearest preserve site available, as approved by FWS/DFG.

CTS will only be translocated to sites that contain potential breeding habitat (i.e., pools that contain standing water continuously for at least ten weeks, extending into April) that does not already support a CTS breeding population.

Where a CTS population is established through salvage or mitigation subsequent to the adoption of the Conservation Strategy, the presence of this population will not require a change in the mitigation obligations of surrounding property owners.

5.2.7.2.3 Plant Translocation

Currently, there is no genetic information available about the listed plants on the Santa Rosa Plain. Phenotypically, there are morphological differences in various portions of the range for the plants. This variation can generally be conserved by translocations to sites near the impact site.

Translocation of plants has been successful in some parts of the Santa Rosa Plain. Future success of translocations plants in the Santa Rosa Plain will depend on proper site selection, planning, management, and monitoring. Site preparation and conditions of the site are some of the primary factors affecting successful translocation. If a site is being restored or enhanced, it should mimic the natural topography, soil conditions, and hydrology. Long term monitoring is needed to track success and determine needed management actions if success is not achieved. If a project is approved for translocation of listed plants as a mitigation measure, there must be an adaptive management plan with long-term monitoring of the site. The programmatic biological opinion for listed plants (Appendix B) gives further guidance on this issue.

It may take over 10 years to determine the success of habitat creation or restoration involving the translocation of sensitive plants. In some years, due to climatic factors or vegetative competition, they may not germinate and survive to seed set; in other years they may be quite abundant. This is why long term monitoring (e.g. 10 years) is important.

Under the Conservation Strategy, translocation is considered a recovery and management action and would be undertaken by or at the direction of DFG and FWS. Projects resulting in the loss of CTS breeding habitat or pools with known populations of endangered plant species will be responsible for the salvage and relocation as directed by DFG and FWS. The project will not be responsible for tracking the success of the translocations. Success will be evaluated by DFG and FWS using management funds or research grants.

Because the listed species in the recovery plan are so imperiled, seed collection and banking is a high priority to guard against extinction or irreversible decline of the species. Seed collection and banking safeguards against loss or decline of the species due to catastrophic events, is an important measure until existing populations are adequately secured and managed, and until plants at additional sites are found, repatriated, or introduced. Seed banking also provides material that may be used in future enhancement, repatriation, or introduction of populations.

5.2.7.3 Mitigation Banking

On the Santa Rosa Plain, there are two types of mitigation banks, wetlands mitigation banks and preservation banks. Banks are expected to be an important method of satisfying mitigation requirements under the conservation strategy. Preservation banks are established to preserve existing occupied habitat of sensitive species to offset losses of habitat elsewhere. Each mitigation bank may be established for a specific purpose, depending on the resources present and/or proposed to be created on the bank site. On the Santa Rosa Plain, these would be for wetland creation and/or the protection of the four listed plants and the CTS, or some combination of these species. Banks are pre-approved sites which sell mitigation credits which can be used to satisfy the mitigation obligations of a development project. Approval of the mitigation bank is conducted by the interagency Mitigation Banking Review Team (MBRT), which includes the USACE, FWS, DFG, NCRWCQB, and USEPA (see Appendix F). In gaining approval of a preservation bank, the bank operator demonstrates that the bank supports the species for which credits will be granted and develops a management and monitoring plan to assure long term protection and maintenance of the site. In establishing a bank, a property owner or banker enters into a contractual agreement with the regulatory and resource agencies to provide for the development, preservation, and long term management of the bank site. In doing so, the banker is authorized to sell mitigation credits based on the resources the bank supports. The focus of the management plan is to assure the species and their habitat will be preserved and maintained on the site.

Wetland mitigation banks are sites on which wetland habitat is already present and additional wetland habitat is created, restored, and/or enhanced. Credits are based on the number of acres of wetlands created at the bank. Credits can be authorized for creation or restoration of new wetlands and enhancement of degraded wetlands if appropriate. The total acreage of wetlands, existing and created on a site, is limited to assure that an appropriate balance of wetlands to uplands is maintained for proper ecological function. On the Santa Rosa Plain, many vernal pool areas have been degraded by past land use, particularly cultivation of grain crops and orchards. Where enhancement is involved, only partial credit is granted so that the number of credits is less than the number of acres enhanced. The reason this is generally an acceptable practice in the Santa Rosa plain is that many of the wetlands have been impacted or altered by previous land use practices, which has changed their topographic complexity and hydrologic characteristics, and ability to function as habitat for sensitive plants and CTS. Restoration and enhancement focus on restoring the historic configuration and hydrologic function of the wetlands and their surrounding uplands. Wetland credits are sold on an acre-for-acre basis and are used to meet no-net-loss requirements under Sections 401 and 404 of the federal C W A and state Porter-Cologne Act.

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Plant credits are granted based on the quality of the site determined by the Habitat Quality Evaluation, developed during the Santa Rosa Plain Vernal Pool Ecosystem Preservation Planning process. Since the plants in question are found in the wetlands, the number of credits is based on the amount and quality of wetlands present on the site. Consequently, plant preservation banks can be authorized to sell more credits than the actual amount of habitat the site supports based on the quality of the site in relation to the quality of sites being lost. Plant preservation banks can sell credits to compensate for the loss of occupied or potential habitat under the federal and state endangered species acts, CEQA, and Section 404 of the Clean Water Act.

CTS preservation banks are established to protect and manage known occupied habitat for the species. Credits authorized for sale are based on the number of acres of habitat present on the site. No distinction is made between aestivation and breeding habitat in the allocation of credits; although, the bank must have a breeding pool onsite or be within 2200 feet of a breeding pool or an already protected site with a breeding pool. In cases where breeding habitat is not present, a breeding pool can be created if deemed appropriate by the resource agencies. Credits can be sold to meet mitigation requirements under the Federal ESA.

In establishing a mitigation bank the following actions must be completed before the bank can be authorized:

1. The site must be preserved in perpetuity through dedication of fee title or a conservation easement to an appropriate resource management agency or organization.
2. A management plan must be prepared and approved by the authorizing agencies. The management plan describes the actions that will be taken to maintain and enhance the site for the benefit of the species and habitat for which the bank is created. In the case of wetlands banks, a wetland creation and restoration plan must be prepared and approved, and the wetlands must be created and demonstrated to function properly.
3. A monitoring and remediation plan must be prepared to document the success of creation/restoration efforts and the management actions in achieving the objectives of the bank.
4. An endowment must be established for long term management of the bank site.

This list of actions is general in nature, and more detailed information is shown in Appendix D.

Table 2 describes how credits at banks are allocated and sold. As noted above each mitigation bank is established for a specific purpose (e.g., CTS, plants, wetlands, or a combination thereof). Compensation for impacts at the project site will be determined as outlined Section 5 of the Conservation Strategy. The amount of compensation required for impacts at the project site are determined independently through the appropriate permitting process. All mitigation banks are granted a specific number of credits that may be sold. The number of credits allocated to a bank is generally related to the number of acres of habitat present on the bank site, with the exception of plants as described above. If a bank is authorized to sell a combination of creation and preservation credits, it may be authorized more credits than the total area of the bank, but it can

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only sell in combination a total that corresponds to the total area of the bank.

This example is a combination bank which includes created wetlands, and plant and CTS preserved habitat. The bank site is 100 acres, all of which is considered CTS habitat, it also supports 5 acres of existing wetland which support populations of endangered plants, and 10 acres of wetlands have been created on the site. Based on the resources present it is allocated a total of 115 credits. Based on the size of the bank the total number of credits which can be sold is limited to 100 credits. This example assumes the mitigation bank calculates 1 acre = 1 credit.

Table 2

Mitigation Bank	Project Name/Number	Compensation For Project Site Impacts	Credits Purchased from Mitigation Bank	Mitigation Bank Balance
Name of Bank Here Total Acreage of Bank equals 100 acres				100 CTS credits available 5 ac plant credits available 10 wetland credits available
	Project One	40 ac CTS 2 ac plants 2 ac wetlands	36 ac CTS 2 ac plants 2 ac wetlands	60 CTS credits 3 plant credits 8 wetland credits
	Project Two	1 ac plants 3 ac wetlands	1 ac plants 3 ac wetlands	56 CTS credits 2 plant credits 5 wetland credits
	Project Three	50 ac CTS 3 ac plants 5 ac wetlands	43 ac CTS 2 ac plants--- (1 ac plant credit must be purchased elsewhere.) 5 ac wetlands	6 CTS credits 0 plants credits 0 wetland credits
	Project Four	7 ac CTS 1 ac wetlands	6 ac CTS-- ac CTS must be purchased elsewhere 1 ac wetland credit must be purchased elsewhere	0 CTS credits 0 plants credits 0 wetland credits

Explanation of project 1 transaction: An applicant must secure 40 CTS, 2 wetlands, and 2 plant

acres of habitat for compensation of their project impacts. This hypothetical mitigation bank supports 100 acres of habitat for CTS, 5 acres of plants, and 10 acres of wetlands. Because this bank supports habitats for all of the species impacted, the applicant can do “one-stop-shopping”. The applicant purchases 36 CTS, 2 plant, and 2 wetland credits. The wetland and plant habitats at the mitigation bank is also considered habitat for CTS. Therefore, purchasing 2 plant and 2 wetland credits also satisfies 4 acres of the required 40 CTS acres. In order to reach 40 CTS acres, the applicant purchases 36 CTS specific credits.

This can be accomplished at either an approved mitigation bank or another suitable site as determined by DFG and FWS.

5.2 Implementation Plan

This section describes the various actions that can be taken to implement the Conservation Strategy and to continue to address the conservation of the species. These individual actions could be supplemented or replaced by other actions, as appropriate, as implementation occurs. Each governmental agency operates within the laws, ordinances, and regulations established by the applicable governing bodies. There are a variety of tools within those regulations that can be applied to implementing the Conservation Strategy. Likewise, private individuals and organizations operate within the boundaries established by themselves or their decision-makers. Following is the proposed plan for implementing the Conservation Strategy. The success of the Conservation Strategy relies on the implementation of steps 1 and 2 of this plan. Continued coordination and communication among the federal, state, and local agencies is also necessary to successfully implement the strategy.

Step 1

Time frame: Upon completion of the final Conservation Strategy

Memorandum of Understanding – This document would be executed by each of the Conservation Strategy Team member entities to express support for the Conservation Strategy and indicate intent to implement the Conservation Strategy within existing discretionary project approval processes. This first step would provide some development process predictability, but each project with potential impacts to CTS or listed plants would still need to prepare a CEQA document to meet the requirements of CEQA, and to obtain individual approval from FWS, DFG, USACE, and NCRWQCB.

Step 2

Time frame: Within one year after completion of the final Conservation Strategy

US Army Corps of Engineers Section 404 Permit – The USACE would initiate formal consultation with the FWS for a programmatic biological opinion on all USACE permits in the Santa Rosa Plain. Once the USACE receives the programmatic biological opinion, processing time for individual applications will be drastically reduced from current processing time.

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Programmatic Biological Opinion – This action would be taken by the FWS to authorize incidental take for listed species on the Santa Rosa Plain on a programmatic basis. The programmatic biological opinion would expedite the USACE and NCRWQCB wetlands permitting processes. It would also replace the existing programmatic biological opinion for the listed plant species.

Section 401 Water Quality Certification and/or Waste Discharge Requirements (Dredge/Fill Projects) – If the applicant complies with the Conservation Strategy, and there is no net loss of wetland acreage, the approval process will be streamlined by NCRWQCB pursuant to section 401 of the C W A, and the state Porter-Cologne Act.

California Endangered Species Act Permit – The California Department of Fish and Game would issue permits to allow incidental take as provided for in Fish and Game Code section 2081, or make a consistency determination with a federal Biological Opinion as provided in FGC 2080.1.

Step 3

Time frame: Approximately two years after completion of the Conservation Strategy

Local Ordinances – Ordinances would be adopted by the local governmental agencies that would implement the provisions of the Conservation Strategy. The local lead agencies under CEQA would prepare and certify EIRs disclosing the environmental effects of adopting local ordinances to implement the Conservation Strategy. The EIRs may be for the entire jurisdiction or for specific geographic areas.

Template HCP/EA – For projects that do not qualify for consultation pursuant to Section 7 of the ESA and which comply with the Conservation Strategy, FWS would develop a template habitat conservation plan / environmental assessment which applicants could use.

Low-effect HCP – Where appropriate, FWS would develop a low-effect habitat conservation plan.

Step 4

Time frame: Within 3 to 5 years after completion of the Conservation Strategy

Local jurisdictions would determine if a habitat conservation plan would be necessary or appropriate for the Santa Rosa Plain.

5.4 Implementation Review

Given the complexity of the ecological system the Conservation Strategy is addressing, and the limited available information, it is recognized by the Team that there is uncertainty associated with the recommendations of the Strategy. Implementation review is an approach to addressing this uncertainty (Cylinder, Bogdan, and Zippin, 2004). In addition, with most large scale

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conservation planning efforts, land use may also change over time which can lead to the need for changes in conservation efforts. Implementation review will be used to assure a well distributed population of CTS and listed plants throughout the nine conservation areas. It is preferred that mitigation occur in conservation areas in close proximity to the area of impacts.

Effective implementation review requires a monitoring and assessment component which provides for the collection and integration of new information into the Conservation Strategy. To regularly review the implementation of the Conservation Strategy, an implementation review team will be established as part of the Conservation Strategy consisting of FWS, DFG, USACE, USEPA, NCRWQCB, and local agencies (Sonoma County, Santa Rosa, Rohnert Park, and Cotati). It will meet annually to review new information and progress in implementing the Strategy. The Implementation Review Team may be convened at other times by any team member. Based on that review, it will prepare a report describing the status of implementation and making recommendations as needed to the implementing agencies on actions necessary to assure that the objectives of the strategy are achieved. For example, recommendations could include changes in conservation area boundaries, and research needs. The report will also provide information and recommendations regarding distribution of preserves within the nine conservation areas. The report will be made available to the public.

The roles of the Implementation Review Team members will be as follows:

- FWS – Lead agency; convenes annual meetings
- DFG – Maintain preserve data and monitoring data
- Local Agencies – Maintain land use and general plan data

If preserve land distribution is not in accordance with the Conservation Strategy objective of distributing preservation throughout the nine conservation areas, the Implementation Review Team will recommend measures to correct any discrepancy in the distribution of preserve lands among the conservation areas. Any measures adopted by the implementing agencies shall become components of the conservation strategy.

5.5 Implementation Monitoring

As part of the Conservation Strategy, and to facilitate implementation review, a geographic based tracking system will be developed to monitor land use change, and incorporate new information and the results of management changes and progress toward achieving the conservation objectives within each conservation area. DFG will be the lead agency for maintaining the tracking system. DFG will request land use information from the local agencies which are responsible for the agency general plans and land use designations. Information from the tracking system will be shared with the Implementation Review Team.

Additional information needs may be identified as part of the ongoing implementation of the Conservation Strategy, which may require focused research. The DFG and FWS, working with other agencies and interested scientists, will develop study proposals and pursue funding for this research.

SECTION 6 – POTENTIAL FUNDING SOURCES

This section describes a variety of potential funding sources to assist in implementation of the Conservation Strategy. The most likely and certain source is through direct mitigation of projects that are proposed within the range of the CTS. This is discussed in more detail in the mitigation section above. There are, however, other potential sources of funding. Some of these are as follows:

6.1 Section 6 Recovery Land Acquisition grants

These are highly competitive, and usually grant proposals are for \$500,000 or less. The ranking criteria are weighted toward benefits to multiple species with final or draft recovery plans, high species recovery priority number. The acquisition is to be of size to protect all habitat needed for recovery/species needs through its entire life cycle (i.e. both breeding ponds and upland habitat for CTS), and have sizable cost share by non-federal contributors (need minimum 25% cost share, and more points are given for a higher cost share). DFG would have a say in whether Wildlife Conservation Board money is used for non-Federal contributors. The cycle is annual, and the pre-proposal call is expected to come out in the fall and due around December. If the pre-proposal ranks high enough (decided by FWS and DFG), the applicant is allowed to submit a full proposal. The full proposal needs to identify parcels for acquisition, and must have willing sellers. Full proposals are due in the Spring, and decisions will be made by FWS/DFG, then forwarded to the Washington DC office of the FWS, who makes the final decision. Awards are announced end of that fiscal year. Federal funds cannot be used for mitigation, but can be used on portions of parcels beyond that needed for mitigation (e.g., if 15 acres is needed for mitigation, but 20 acre parcel is what is for sale, federal money can be used to go toward the extra 5 acres of that parcel that is not for mitigation).

6.2 HCP Land Acquisition Grants

This is a more sizable source of funding, but not applicable at this time since no HCP is permitted. If and when an HCP is permitted, this is a potential source of funding.

6.3 Private Foundations

Funding may be available through private foundations, such as Packard Foundation, Hewlett Foundation, etc., for projects that achieve habitat conservation.

6.4 State Revolving Fund

This is a state loan program that provides low interest loans to public agencies for water related projects. The program is administered by the State Water Resources Control Board. A specific source of funding for repayment of the loan would be needed.

6.5 Sonoma County Agriculture and Open Space Protection District

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The District has local funding for the preservation of agricultural lands and open space and has, in the past, participated in acquisitions that contribute to the Conservation Strategy. The District could also participate in future funding that would support implementation of the Conservation Strategy; however, District funds may not be used to mitigate for the impacts of development projects.

6.6 Direct Legislative and Congressional Appropriations

Funding could be made available through direct appropriations by the Legislature at the state level and/or the Congress at the federal level.

6.7 The Private Stewardship Program

The Private Stewardship program provides grants and other assistance on a competitive basis to individuals and groups engaged in local, private, and voluntary conservation efforts that benefit federally listed, proposed, or candidate species, or other at-risk species.

SECTION 7 – PUBLIC OUTREACH AND PEER REVIEW

7.1 Public Outreach

The Team recognized the need for public input in the process of developing the Conservation Strategy. Prior to developing the draft Conservation Strategy, the Team held a public meeting on May 24, 2004 to gain public input into the development of the Conservation Strategy. The team also determined that a second public meeting would be held when the draft Conservation Strategy was complete and before the Conservation Strategy was finalized. The meetings of the Team were not open to the public.

To further inform the public about the Team efforts, notes of each of the Team meetings were drafted and posted on the City of Santa Rosa Web site for public review. Other information such as questions and answers regarding the team process, peer reviewer selection criteria, and peer review questions were also posted on this web site for public review (<http://ci.santa-rosa.ca.us/default.aspx?PageId=1111>).

7.2 Peer Review

While several of the members of the Conservation Strategy Team are biologists and/or have specific knowledge of the CTS and listed plants, the Team determined that it was important to have its work reviewed by independent scientists who were not involved in the development of the Conservation Strategy. The Team also determined that this independent review would utilize a blind peer review process; whereby, the individuals conducting the peer review would be known only to the Team members representing FWS, DFG, and the facilitator. The full Team developed a set of criteria to be utilized by the three individuals listed above in selecting the peer reviewers. The peer reviewers were selected from a list of potential peer reviewers submitted by individual members of the Team.

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The peer reviewer selection criteria developed by the Team and used to select the peer reviewers are shown in Appendix G.

The Team also developed a set of scientific questions to guide the peer reviewers in their review of the Conservation Strategy. These are detailed in Appendix H.

SECTION 8 – GLOSSARY OF TERMS

Aestivation – Living underground

Breeding ponds – The ponds or wetlands, seasonal or perennial, where the CTS breed

Buffers – Lands that might not have high habitat values alone but act to buffer preserves from adverse effect of adjoining lands. They also may act as wildlife corridors and may be used for aestivation in some instances.

Conservation area – An area designated for conservation and or mitigation for CTS or listed plant species

Conservation Strategy – The strategy developed by the Santa Rosa Plain Conservation Strategy Team for the conservation of habitat for the CTS and listed plant species

Impact area – Areas where it has been determined that projects would impact CTS

Listed plants – The plants located in the Santa Rosa Plain listed under the Endangered Species Act, more specifically, the Sonoma sunshine (*Blennosperma bakeri*), Burke’s goldfields (*Lasthenia burkei*), and Sebastopol meadowfoam (*Limnanthes vinculans*), and many flowered navarretia

Non-native predatory species – Species not native to the Santa Rosa Plain that may prey on the CTS

Migration – The movement of the CTS between aestivation and breeding

Plain – Santa Rosa Plain, located in central Sonoma County, bordered on the south and west by the Laguna de Santa Rosa, on the east by the foothills, and on the north by the Russian River

Preservation bank – Mitigation bank established to preserve and manage land for its value has habitat for listed species or unique habitat characteristics, (vernal pools). Credits can be established based on the amount of acreage of the site, acreage of unique habitat features or the quality of the habitat.

Preserve site – A site set aside for habitat conservation and/or preservation

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Team – Santa Rosa Plain Conservation Strategy Team

Translocation – The artificial movement of CTS or listed plant species for relocation to another area

Undetermined impact area – Areas within the CTS range where it is not known if projects will impact CTS

Wetland creation – The manipulation of the physical, chemical, or biological characteristics present to develop a wetland on an upland or deepwater site, where a wetland did not previously exist. Establishment results in a gain in wetland acres.

Wetland enhancement – The manipulation of the physical, chemical, or biological characteristics of a wetland (undisturbed or degraded) site to heighten, intensify, or improve specific function(s) or to change the growth stage or composition of the vegetation present. Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention, or wildlife habitat. Enhancement results in a change in wetland function(s) and can lead to a decline in other wetland functions, but does not result in a gain in wetland acres. This term includes activities commonly associated with enhancement, management, manipulation, and directed alteration.

Wetland restoration – The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former or degraded wetland. For the purpose of tracking net gains in wetland acres, restoration is divided into:

- a) Re-establishment: The manipulation of the physical, chemical or biological characteristics of a site with the goal of returning natural or historic functions to a former wetland. Re-establishment results in rebuilding a former wetland and results in a gain in wetland acres.
- b) Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural or historic functions of a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres.

SECTION 9 – ACRONYMS & ABBREVIATIONS

CEQA – California Environmental Quality Act

CESA – California Endangered Species Act

CTS – California tiger salamander (*Ambystoma californiense*)

EA – Environmental Assessment

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ESA – Endangered Species Act

DFG – California Department of Fish and Game

FWS – U. S. Fish and Wildlife Service

HCP – Habitat Conservation Plan

MBRT – Mitigation Banking Review Team

NCRWQCB – North Coast Regional Water Quality Control Board

NEPA – National Environmental Policy Act

Team – Santa Rosa Plain Conservation Strategy Team

USACE – U. S. Army Corps of Engineers

USEPA – U. S. Environmental Protection Agency